



December 14, 2005

Ms. Joan Fleck
California Regional Water Quality Control Board
North Coast Region
5550 Skylane Boulevard, Suite A
Santa Rosa, California 95403

**Subject: Work Plan for Replacement Monitoring Well Installation
Former Boyett Petroleum Site
171 Santa Rosa Avenue
Santa Rosa, California 95404
NCRWQCB File No. 1TSR018**

Dear Ms. Fleck,

On behalf of Boyett Petroleum, Closure Solutions, Inc. (Closure Solutions) is submitting this Work Plan for Replacement Monitoring Well Installation for the former Boyett Petroleum Service Station located at 171 Santa Rosa Avenue, in Santa Rosa, California.

If you have any questions regarding this submission, please contact Ronald Chinn of Closure Solutions at (925) 348-0656 or rchinn@closuresolutions.com.

Sincerely,

CLOSURE SOLUTIONS

A handwritten signature in black ink, appearing to read 'Ronald D. Chinn'.

Ronald D. Chinn, P.E.
Principal Engineer



Enclosure: Work Plan for Replacement Monitoring Well Installation

cc: Jessica Holcomb, Boyett Petroleum
Bradley Erskine, Kleinfelder, Inc.
Matthew G. Dudley, Sedgwick, Detert, Moran & Arnold, LLP
Brian Zagon, Resolution Law Group
David Frangiamore, Law Offices of David H. Frangiamore



CLOSURE SOLUTIONS, INC.

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California Regional Water Quality Control Board
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**Subject: Work Plan for Replacement Monitoring Well Installation
Former Boyett Petroleum Site
171 Santa Rosa Avenue
Santa Rosa, California 95404
NCRWQCB File No. 1TSR018**

Dear Ms. Fleck,

On behalf of Boyett Petroleum (Boyett), Closure Solutions, Inc. (Closure Solutions) has prepared this Work Plan for Replacement Monitoring Well Installation (Work Plan) for the former Boyett service station located at 171 Santa Rosa Avenue, in Santa Rosa, California (the Site, Figure 1). This Work Plan has been prepared in response to the North Coast Regional Water Quality Control Board's (NCRWQCB's) Cleanup and Abatement Order No. R1-2005-0099, issued on October 7, 2005. The Cleanup and Abatement Order is included in this Work Plan as Attachment A.

As required by the Cleanup and Abatement Order, this Work Plan proposes the installation of a monitoring well network to replace the monitoring wells destroyed during remedial excavation activities in 2004, and the installation of a downgradient monitoring well as described in the Revised 2003 Corrective Action Plan (Kleinfelder, August 15, 2003). In addition to these wells, this Work Plan proposes the installation of an additional monitoring well along the Prince Memorial Gateway Project (PMGP) walking trail to further assess soil and groundwater impacts in the vicinity of the Site, and the installation of replacement wells for existing monitoring wells MW-14, MW-15 and MW-16, which are currently located inside the adjacent Pacific Gas & Electric (PG&E) substation.

1.0 BACKGROUND

The Site is an approximately ½-acre property that had formerly housed a retail gasoline service station that operated from the 1970's until the early 1990's. The Site is bounded by Santa Rosa Avenue to the east, Sonoma Avenue to the south, a PG&E substation to the west,

and Santa Rosa Creek to the north. The Site is a relatively level lot with a surface elevation of approximately 162 feet above mean sea level (AMSL).

Historically, two significant releases of petroleum hydrocarbon occurred at the Site. The first release was documented in 1985 when gasoline was discovered seeping into Santa Rosa Creek from cracks in the concrete channel. A subsurface investigation documented the presence of up to eight feet of floating petroleum product on groundwater in the vicinity of the dispenser islands. Subsequent subsurface investigative work revealed evidence of a second release in 1987, when up to 5.83 feet of floating petroleum product was found on groundwater in the vicinity of the dispenser islands.

In January 1985, IT Corporation advanced and installed six monitoring wells (MW-1 through MW-6) in an area around the active Boyett Petroleum Service Station. Monitoring wells MW-1 (located near the northern end of the property), and MW-4, located adjacent to and downgradient of the USTs, reportedly contained gasoline at the groundwater table. Monitoring well MW-5, located upgradient of the station facilities contained fuel product, which was later attributed to the Clark's Auto Parts facility.

In May 1985, IT Corporation installed four additional monitoring wells (MW-7 through MW-10) to define the extent of the contamination in the subsurface. Monitoring well MW-7 was placed at the south end of the dispenser island. MW-7 was reported to contain "approximately four inches of old, dark brown product on the water table". IT Corporation concluded that the product detected in MW-7 was the result of a "...historic leak rather than a leak occurring at [that] time". Monitoring well MW-10 was located south of the Site in Sonoma Avenue to monitor the presence of hydrocarbons from the Clark's Auto Parts facility.

In 1987, Groundwater Technology Inc. installed two additional groundwater monitoring wells (MW-11 and MW-12). In 1988, Groundwater Technology oversaw the installation of a groundwater extraction system which operated from November 1988 to September 1991. The groundwater extraction system reportedly extracted groundwater at a rate of approximately 20 gallons per minute from one extraction well (RW-1), and extracted and treated 850,000 gallons of contaminated groundwater over the lifetime of the system. Dissolved phase hydrocarbon concentrations in the influent to the treatment system decreased approximately 70 percent during this time period; from 14,000 ug/L to 4,000 ug/L of Total Petroleum Hydrocarbons (TPHg), and from 4,500 to 1,744 ug/L of total benzene, toluene, ethylbenzene and xylenes (BTEX constituents).

WHF Environmental was retained by Boyett in January 1992 and provided services through 1997. Three USTs were removed by WHF on September 10, 1992 under the supervision of the Santa Rosa Fire Department. WHF Environmental observed that the "...tanks did not appear to have leaked." Approximately 150 cubic yards of petroleum impacted soil was excavated from the tank excavation at the time of tank removal.

Based on a perceived limitation of the groundwater extraction treatment system, WHF Environmental recommended the installation of a soil vapor extraction treatment system to address the petroleum hydrocarbons adsorbed to soil. Pilot testing of the soil vapor extraction system was conducted in September 1993 and a permanent system was installed in February 1994. The installation of the soil vapor extraction system included the advancement of 12 soil vapor extraction wells and the installation of a natural gas thermal oxidizer. The soil vapor extraction system was operated from March through August 1994.

In 1997, Kleinfelder was retained by Boyett, and on December 31, 1997, Kleinfelder advanced three geotechnical borings (K-1, K-7 and K-8) at the Site. K-1 was located in the northwest corner of the Boyett Site between MW-1 and MW-2; K-7 was located in the northeast portion of the PG&E property, and K-8 was located approximately 225 feet west of K-7. Analytical results of soil samples collected from K-7 showed significant hydrocarbon impact at approximately 25 feet bgs.

On February 23 through 25, 1998, Kleinfelder advanced five soil borings (K-2 through K-6). The borings were drilled to depths ranging from 26.5 to 41.5 feet bgs. Soils samples were collected at 5 foot intervals.

In November, 1998, Kleinfelder advanced a boring for the installation of monitoring well MW-13. During drilling, a previously unidentified UST was encountered on November 3, 1998. The UST was reportedly a 3.5' diameter steel tank, with an estimated capacity of 500 gallons. Monitoring well MW-13 was moved to another location on-site in the northwestern portion of the Boyett property. When the UST was removed in 1999 by Kleinfelder, a small corrosion hole was observed in the bottom of the tank.

On April 30, 1999, Kleinfelder prepared and submitted a Modified Corrective Action Plan for the Boyett Petroleum Site. On March 7, 2000, Kleinfelder submitted an Implementation Report documenting the performance of remedial activities proposed in the Modified Corrective Action Plan. Remedial actions implemented under the Modified Corrective Action Plan included:

- 1) Destruction of monitoring wells MW-7, MW-11 and MW-13 in preparation for excavation activities;
- 2) Excavation to 22 feet bgs and removal of approximately 6,500 tons of hydrocarbon impacted soil from two locations beneath the former Boyett USTs and dispenser islands;
- 3) Placement of Oxygen Release Compound at the bottom of the excavation with the backfill material;
- 4) Replacement of three on-Site groundwater monitoring wells destroyed by excavation activities, and;
- 5) Pressure injection of approximately 3,400 pounds of Oxygen Release Compound slurry into the subsurface soil and groundwater in areas that were not excavated.

On September 14, 1999, Kleinfelder prepared and submitted an Off-Site Corrective Action Plan (subsequently revised on October 12, 2001). As part of the Off-Site Corrective Action Plan implementation, Kleinfelder installed four monitoring wells (MW-14 through MW-17) at the adjacent PG&E substation located at 515 Sonoma Avenue. The wells were installed on November 18 and 19, 1999. In January 2000, a passive product skimmer was installed in monitoring well MW-14, located on the PG&E property. The product skimmer was monitored quarterly for accumulated product, however no free product was recovered from 2000 to 2003. The product skimmer was removed from MW-14 in 2003.

An interim groundwater extraction system was installed by Kleinfelder in January 2004. The remediation system extracted groundwater from monitoring wells MW-1 and MW-12A, located in the northwestern and southwestern portions of the Boyett Site, respectively. The groundwater extraction system operated from January to July 2004, and reportedly extracted a total of 706 grams of gasoline range organics, and 60 grams of volatile organic compounds (VOCs) from the subsurface.

From May through July, 2004, Kleinfelder performed a major remedial excavation of the Boyett property and Santa Rosa Creek. On the Boyett property, the excavation extended to approximately 27 feet bgs, resulting in removal of the silty clay unit overlying the primary water bearing zone. The excavation also extended into the creek bed, and a concrete liner was installed to protect against the potential for contaminants to migrate upward through the

channel bottom. The remedial excavation resulted in the removal of approximately 10,196 tons of material, which was transported to Potrero Hills Landfill, in Suisun City for disposal. The lateral extent of the excavation is depicted in Figure 2.

In July 2004, Kleinfelder installed a soil cutoff wall along Santa Rosa Creek adjacent to the Boyett and PG&E properties. The cutoff wall was constructed of interlocking high strength single sheet piles, with the joints sealed with a water-tight sealant. The sheet pile cutoff wall is anchored into the clay units above and below the primary water-bearing zone (i.e. across the silty-sand unit extending from approximately 25 feet bgs to 40 feet bgs). The lateral extent of the cutoff wall is depicted in Figure 2.

2.0 NEARBY PROPERTIES AND ENVIRONMENTAL CASES

The Clark's Auto Parts facility located at 203 Santa Rosa Avenue is an active Leaking Underground Storage Tank case (NCRWQCB Case No. 1TSR253). This property is directly south of the Boyett property, across Sonoma Avenue. Clark's operated a vehicle repair shop which included a vehicle lift, a waste oil UST, fuel USTs and a dispenser island. The fueling operations were reportedly ceased in the 1970's, however the fuel and waste oil USTs remained in place until they were removed in May 1997. Residual hydrocarbons are known to be present in both soil and groundwater beneath this property and are known to have migrated to the north and northwest of the property. In September 1998, Kleinfelder collected a sample of free product from monitoring well MW-10, located immediately downgradient of the Clark's property. Based on gas chromatography and flame ionization detection, the analytical laboratory concluded that the majority of the product from well MW-10 is gasoline; tetraethyl lead was also present in the sample. Kleinfelder concluded that the free product was consistent with contaminant known to be present beneath the Clark's property.

Empire Cleaners, a dry cleaning operation located at 526 Sonoma Avenue is an active Spills Leaks Investigation and Cleanup (SLIC) case (NCRWQCB Case No. 1NSR366). This facility is located to the southwest of the Boyett property, across Sonoma Avenue. This facility is known to have released dry cleaning solvents into the subsurface, and contaminants, including PCE and its breakdown products, have contributed to a regional groundwater quality issue in the immediate vicinity of the Boyett property. The contaminants are known to have migrated northward across Sonoma Avenue and are present beneath the PG&E substation.

PG&E Substation A borders the Site to the west, and is located at 515 Sonoma Avenue. The PG&E facility houses a low-profile, high voltage electrical substation that supplies electricity to most of downtown Santa Rosa. A chain link fence and masonry wall surrounds the facility, and access to the facility is restricted. Four Boyett groundwater monitoring wells are present on the PG&E facility (wells MW-14, MW-15, MW-16, and MW-17). These monitoring wells have been historically included in Boyett's Periodic Groundwater Monitoring Program, however based on discussions with PG&E representatives, PG&E has made it clear that continued access to the substation facility poses significant health and safety concerns. Boyett and Closure Solutions agree with PG&E, and in the interest of health and safety, propose to minimize periodic monitoring of existing wells within the PG&E Substation.

PG&E has, however, expressed that it does not object to the installation and periodic monitoring of wells located on the PG&E property outside the substation fenced area. Because of this, Boyett proposes to install wells outside the substation fenced area to replace existing monitoring wells MW-14, MW-15 and MW-16. The replacement wells will be located along the PMGP walking trail as close as practicable to the existing wells. Once the wells are installed, Boyett will properly destroy MW-14, MW-15, and MW-16, located within the substation fenced area. Please note that Boyett does not propose to destroy monitoring well MW-17, located in the eastern/central portion of the PG&E substation. The installation of replacement wells is described in further detail in this Work Plan.

3.0 SITE GEOLOGY AND STRATIGRAPHY

The nearest surface water body to the Site is Santa Rosa Creek, located immediately adjacent to the Site to the north. The Site has been the subject of several subsurface investigations to evaluate contaminant distribution and the site-specific stratigraphy and hydrogeology. Based on data collected during these investigations, the Site and surrounding properties are typically underlain by clay and silt unit which extends from the ground surface to a depth of approximately 25 feet below ground surface (bgs). The clay and silt unit is underlain by a permeable silty sand unit extending from approximately 25 feet bgs to 40 feet bgs. This silty sand unit is thought to be the predominant pathway for groundwater and contaminant transport in the Site vicinity. The silty sand unit is underlain by a silt and clay unit extending from approximately 40 feet bgs to the total depth explored (60 feet bgs).

Shallow groundwater beneath the Site has historically ranged between 12 to 20 feet bgs, and occurs under confined conditions. Groundwater flow direction at the Site has historically

been to the northwest toward Santa Rosa Creek at a typical gradient of 0.03 to 0.04 feet per foot (ft/ft). The hydraulic gradient turns westward parallel to the creek, and typically flattens beneath the PG&E substation to a gradient ranging from 0.01 to 0.02 ft/ft. In 2004, a groundwater cutoff wall was installed along Santa Rosa Creek to protect against groundwater contaminant migration from the Boyett property into the creek.

4.0 PROPOSED GROUNDWATER WELL RE-INSTALLATION

The proposed scope of work consists of replacing the on-Site groundwater monitoring well network which was previously destroyed in advance of the remedial excavations and PMGP redevelopment of Santa Rosa Creek. Monitoring wells MW-1, MW-2, MW-3, MW-4, and MW-13A were destroyed by Kleinfelder in 2004 in preparation of these site activities. Monitoring well MW-7 was destroyed by Kleinfelder in 1999 to facilitate excavation activities that occurred in that year.

In addition to the replacing the destroyed wells, Closure Solutions proposes to install replacement wells for wells MW-14, MW-15, and MW-16, located within the PG&E substation. As described in Section 2.0, continued access to the PG&E substation poses serious health and safety concerns, and PG&E, Boyett and Closure Solutions agree that in the interest of health and safety, continued access should be minimized to the extent possible. Because of this, Closure Solutions proposes to install replacement wells for MW-14, MW-15, and MW-16 outside the fenced area of the substation as close as practicable to the original locations, and properly destroy the existing monitoring wells within the PG&E substation fenced area with exception to MW-17, which is located in the eastern/central portion of the substation.

This Work Plan also proposes the installation of a downgradient monitoring point located approximately 60 feet west of existing monitoring well MW-16. This downgradient monitoring well was previously proposed by Kleinfelder in the 2003 Revised Corrective Action Plan, and was specifically requested in the NCRWQCB's October 7, 2005 Cleanup and Abatement Order. An additional monitoring well, MW-19, is also proposed be installed approximately half way between proposed replacement wells MW-14A and MW-15A, along the PMGP walking trail.

The scope of the well replacement activities involves the installation of nine wells, as described in the following table. The proposed replacement well locations are as shown on Figure 3.

Previously Destroyed Well(s)	Proposed Replacement Well	Location
MW-3	MW-3A	Northeastern Portion of Boyett Property
MW-1 MW-2 MW-13A	MW-2A	Northwestern Portion of Boyett Property
MW-4A	MW-4B	Southeastern Portion of Boyett Property
MW-7	MW-7A	Central Portion of Boyett Property
MW-14	MW-14A	East of MW-14, on Boyett Property
MW-15	MW-15A	North of MW-15, outside substation fenced area
MW-16	MW-16A	North of MW-16, outside substation fenced area
--	MW-18	Approx. 60 feet west of MW-16
--	MW-19	Approx. 90 feet east of MW-15, outside substation fenced area

4.1 PRELIMINARY FIELD ACTIVITIES

Prior to initiating field activities, Closure Solutions will obtain the necessary well installation permits from the Sonoma County Environmental Health Division and Access/Right of Entry Agreements from the City of Santa Rosa or Sonoma County Water Agency, prepare a Site-specific Health and Safety Plan (HASP) for the proposed work, and clear the locations for subsurface utilities. The utility clearance will include notifying Underground Service Alert (USA) of the pending work a minimum of 48 hours prior to initiating the field investigation, and securing the services of a private utility locating company to confirm the absence of underground utilities at each boring location.

A Site-specific Health and Safety Plan (HASP) will be prepared for use by personnel implementing the Work Plan. The HASP will address the proposed monitoring well installations. A copy of the HASP will be available on-Site at all times. The subcontractor(s) performing field activities will be provided with a copy of the HASP prior to initiating work. A safety tailgate meeting will also be conducted daily to review the Site hazards and drilling work scope.

4.2 MONITORING WELL INSTALLATION AND SAMPLING

Nine 4-inch diameter groundwater monitoring wells (MW-2A, MW-3A, MW-4B, MW-7A, MW-14A, MW-15A, MW-16A, MW-18 and MW-19) will be installed using a hollow-stem

auger drilling rig. The wells will be installed to an approximate total depth of 40 feet bgs and will be screened between 25 and 40 feet bgs with 15 feet of 0.010-inch slotted PVC well casing. A number 2/12 graded sand will be placed in the annular space to approximately one foot above the screen. The sand pack will be surged using a surge block prior to placing a two-foot bentonite seal. The annular space will be grouted with neat Portland I/II cement, in accordance with Sonoma County well construction requirements.

Soil samples will be collected at a minimum of every 5 vertical feet, including at areas of obvious hydrocarbon impact, and at significant changes in lithology, and field screened for the presence of residual petroleum hydrocarbon vapor concentrations using a photo-ionization detector (PID) or flame-ionization detector (FID). Soil samples will be classified by Closure Solutions field personnel according to the Unified Soil Classification System (USCS) and examined using visual and manual methods for parameters including odor, staining, color, grain size, and moisture content. Soil samples collected for possible chemical analysis will be collected and handled in accordance with Environmental Protection Agency (EPA) Method 5035. Closure Solutions' sample collection procedures will be in accordance with the EPA Method 5035, and quality assurance/quality control (QA/QC) plan for the analytical laboratory.

Following well installation, the wells will be surveyed for elevation relative to mean sea level and for location coordinates, in accordance with GeoTracker requirements. The wells will be developed by surging and bailing, and then will be incorporated into the quarterly groundwater monitoring program for the Site.

4.2.1 Sample Handling and Analysis

Soil samples for possible chemical analysis will be collected in accordance with EPA Method 5035 requirements. The samples will be collected using an Encore™ (or similar) sampling device, labeled, and preserved accordingly.

The soil samples will be submitted under chain-of-custody protocol to Kiff Analytical, a California State-certified analytical laboratory.

Soil samples will be analyzed for the following constituents:

- Total Petroleum Hydrocarbons as Gasoline (TPHg) and BTEX constituents by EPA Method 8260B

- Total Petroleum Hydrocarbons as Diesel (TPHd) with Silica Gel Clean-up by EPA Method 8015B.
- Total Petroleum Hydrocarbons as Motor Oil (TPHmo) by EPA Method 8015B
- Full Scan Volatile Organic Compounds (VOCs) by EPA Method 8260B

4.2.1.1 Well Development and Sampling

After allowing the wellheads and grout to cure for at least 48 hours, the total well depth and depth to water at each well will be measured using a water level indicator calibrated to within 0.01 foot; the potential presence of free product in each well will also be checked using an interface probe capable of detecting product thicknesses to 1 millimeter. Each well will be developed by alternately swabbing and surging the well using a hand held surge block, and then subsequently removing 8 to 10 casing volumes of water from each well by pumping and/or bailing while monitoring the removed water for parameters such as pH, turbidity, temperature, and conductivity.

Upon completion of well development, groundwater levels will be gauged and groundwater samples will be collected from all of the newly installed wells by lowering dedicated, disposable bailers into each of the wells, collecting water, and decanting the collected water into laboratory-supplied sample containers. Groundwater samples will be labeled, preserved, and submitted to Kiff Analytical for analysis using the methods and analytes described above.

Groundwater samples will be analyzed for the following constituents:

- Total Petroleum Hydrocarbons as Gasoline (TPHg) and BTEX constituents by EPA Method 8260B
- Total Petroleum Hydrocarbons as Diesel (TPHd) with Silica Gel Clean-up by EPA Method 8015B.
- Total Petroleum Hydrocarbons as Motor Oil (TPHmo) by EPA Method 8015B
- Full Scan Volatile Organic Compounds (VOCs) by EPA Method 8260B

4.2.2 Waste Disposal

Investigation derived waste will be temporarily stored on-Site in 55-gallon, DOT-approved 17H drums, pending characterization and disposal. A four-point composite soil sample will be collected from the collected waste for disposal characterization and analyzed in accordance with facility acceptance requirements. Closure Solutions will coordinate the transport and disposal of the waste to an approved California regulated facility.

4.2.3 GeoTracker

In accordance with GeoTracker requirements, Closure Solutions will upload well survey, soil and groundwater analytical, and groundwater gauging data, boring logs, and a PDF copy of the Completion Report (described below) to GeoTracker.

5.0 REPORT OF MONITORING WELL REPLACEMENT COMPLETION

Upon completing field activities and receiving all laboratory analytical data, Closure Solutions will finalize and provide the NCRWQCB with a Report of Monitoring Well Replacement Completion (Completion Report). If there are deviations from this Work Plan or data inconsistencies, these will be discussed in the Completion Report.

6.0 PROPOSED SCHEDULE

Upon receiving written approval of this Work Plan from the NCRWQCB, Closure Solutions will proceed with the proposed work. Closure Solutions will obtain all necessary permits to complete the proposed work. Closure Solutions anticipates completion of the proposed scope of work as required by Item C of the Cleanup and Abatement Order within 60 days of receipt of the RWQCB's concurrence with the plan. Please note that the Cleanup and Abatement Order has required the implementation of the work plan within 45 days of RWQCB concurrence with the plan. While Closure Solutions will make every attempt to comply with the 45-day timeline, the proposed 15 day extension is requested in advance due to foreseeable administrative and logistical challenges associated with drilling in the City redevelopment area.

As required by the Cleanup and Abatement Order, Closure Solutions will submit the Completion Report documenting installation of the wells required under Item D of the Cleanup and Abatement Order to the NCRWQCB within 45 days of completion of monitoring well installation.

7.0 CLOSING

We appreciate the opportunity to submit this Work Plan to the NCRWQCB, and trust that it meets with your approval. Please notify us of your approval as soon as practical. If you have any questions or concerns, please contact Ronald Chinn at (925) 348-0656.

Sincerely,

CLOSURE SOLUTIONS, Inc.



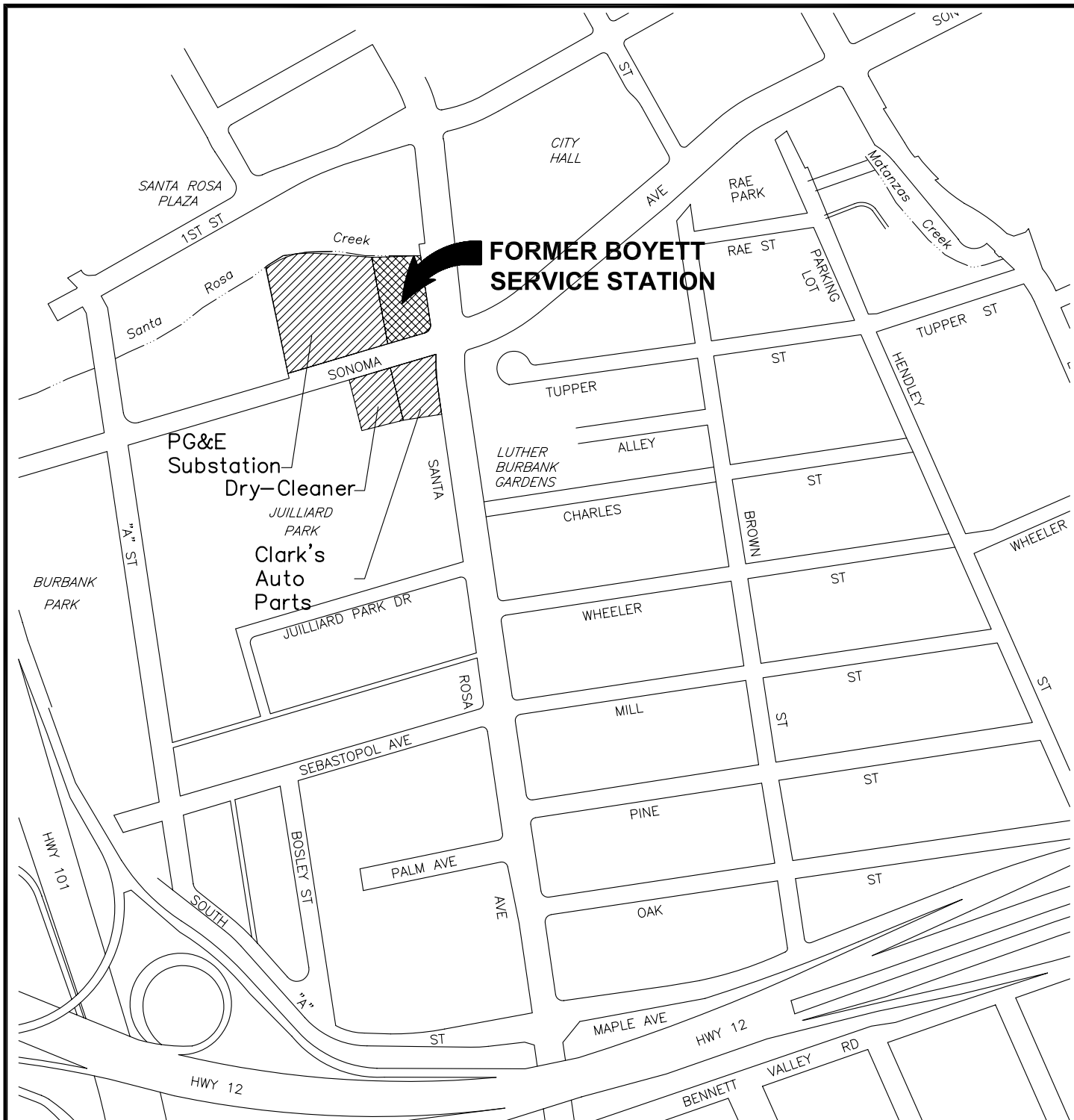
Ronald D. Chinn, P.E.
Principal Engineer



Attachments: Figure 1 - Site Vicinity Map
Figure 2 - Extent of Remedial Excavations & Cutoff Wall
Figure 3 - Site Layout & Proposed Replacement Well Locations
-
Attachment A - Cleanup and Abatement Order No. R1-2005-0099

cc: Jessica Holcomb, Boyett Petroleum
Bradley Erskine, Kleinfelder, Inc.
Matthew G. Dudley, Sedgwick, Detert, Moran & Arnold, LLP
Brian Zagon, Resolution Law Group
David Frangiamore, Law Offices of David H. Frangiamore

FIGURES



**FORMER BOYETT
SERVICE STATION**



NOT TO SCALE

NOTES:

1. BASEMAP SOURCE: KLEINFELDER INC., 2003

FIGURE 1

SITE VICINITY MAP

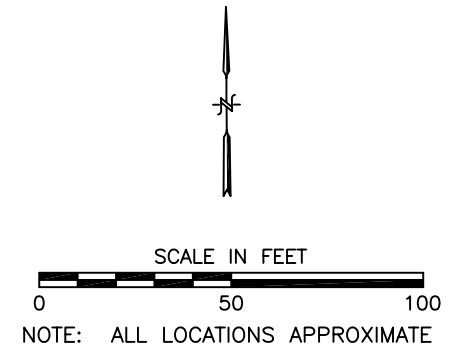
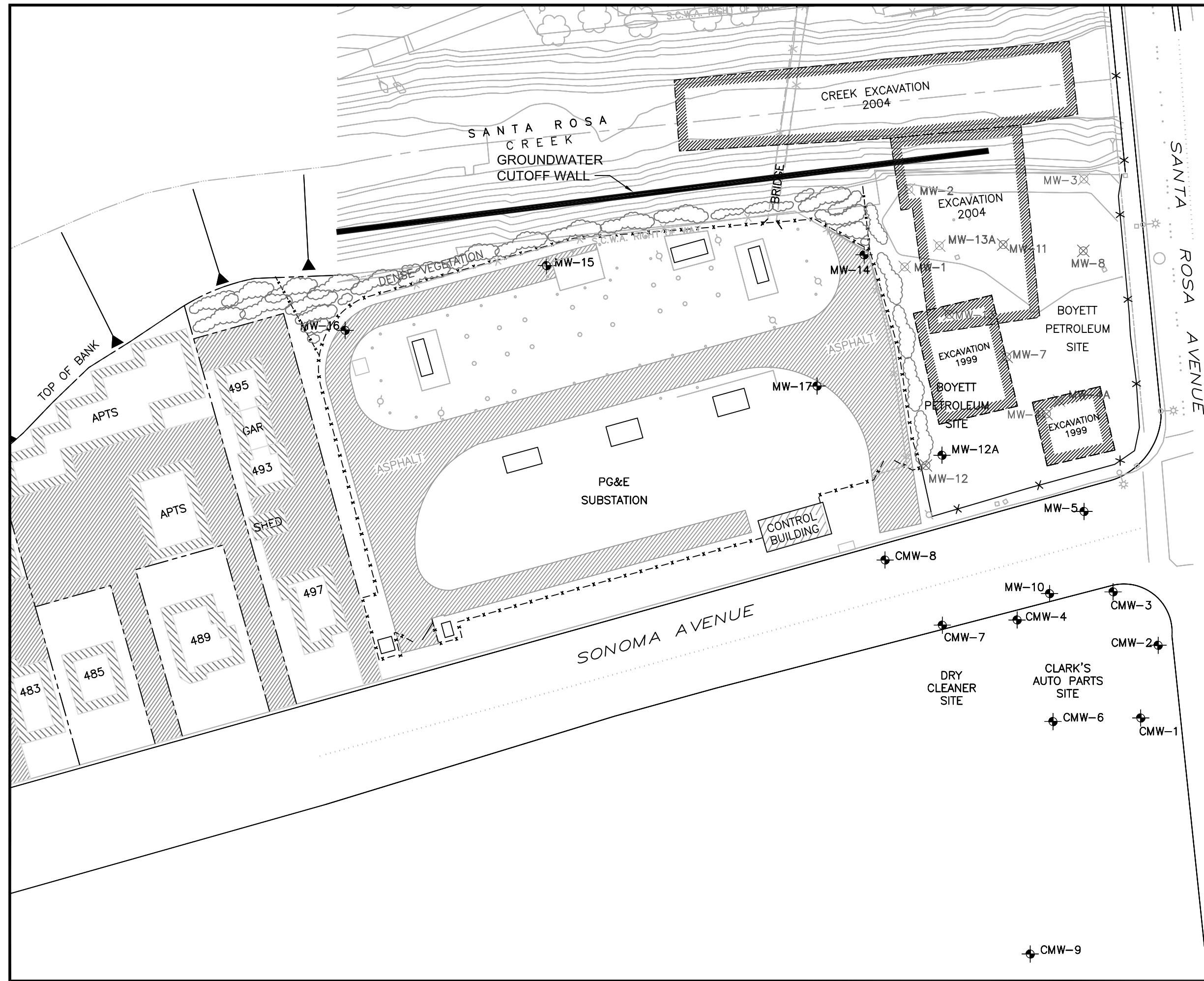
FORMER BOYETT PETROLEUM SERVICE STATION
171 SANTA ROSA AVENUE
SANTA ROSA, CALIFORNIA



CLOSURE SOLUTIONS, INC.

1243 Oak Knoll Drive • Concord
California • 94521

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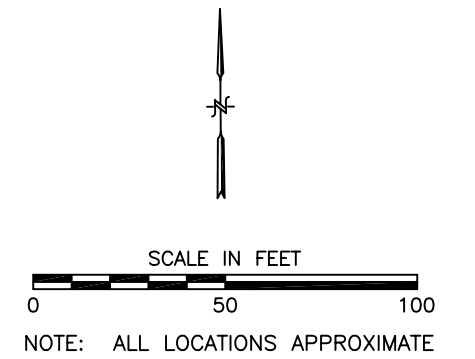
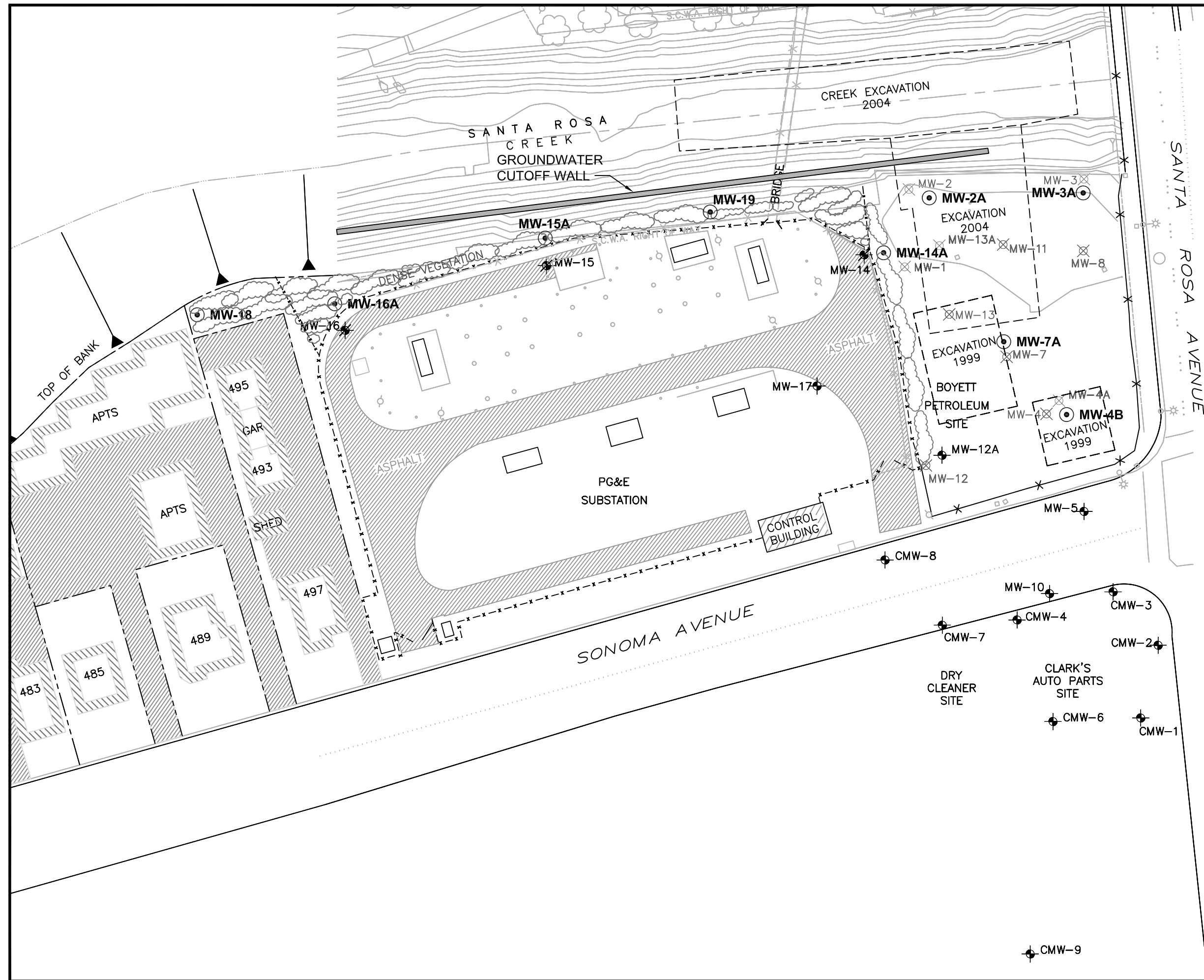


- LEGEND:**
- EXISTING GROUNDWATER MONITORING WELL
 - ⊗ DESTROYED GROUNDWATER MONITORING WELL
 - ☁ DENSE VEGETATION
 - - - FENCE
 - ▨ EXCAVATED AREA
 - ⦿ STREET LIGHT

NOTES:
1. BASEMAP SOURCE: KLEINFELDER, INC.

FIGURE 2
REMEDIAL EXCAVATIONS
AND
CUT-OFF WALL PLACEMENT

FORMER BOYETT PETROLEUM SERVICE STATION
171 SANTA ROSA AVENUE
SANTA ROSA, CALIFORNIA



LEGEND:

- PROPOSED REPLACEMENT WELL
- ✱ PG&E MONITORING WELL PROPOSED FOR DESTRUCTION
- EXISTING GROUNDWATER MONITORING WELL
- ✕ DESTROYED GROUNDWATER MONITORING WELL
- ☁ DENSE VEGETATION
- x-x- FENCE
- [] EXCAVATED AREA
- STREET LIGHT

NOTES:

1. BASEMAP SOURCE: KLEINFELDER, INC.

FIGURE 3

SITE LAYOUT & PROPOSED REPLACEMENT WELL LOCATIONS

FORMER BOYETT PETROLEUM SERVICE STATION
171 SANTA ROSA AVENUE
SANTA ROSA, CALIFORNIA

ATTACHMENT A:
North Coast RWQCB
Cleanup and Abatement Order No. R1-2005-099
October 7, 2005



Alan C. Lloyd, Ph.D.
Agency Secretary

California Regional Water Quality Control Board
North Coast Region
Beverly Wasson, Chairperson



Arnold
Schwarzenegger
Governor

<http://www.waterboards.ca.gov/northcoast>
5550 Skylane Boulevard, Suite A, Santa Rosa, California 95403
Phone: 1 (877) 721-9203 (toll free) • Office: (707) 576-2220 • FAX: (707) 523-0135

October 7, 2005

Mr. Carl and Mrs. Carole Boyett
Boyett Petroleum
P.O. Box 576277
Modesto, CA 95357-6277


Dear Mr. and Mrs. Boyett:

Subject: Cleanup and Abatement Order No. R1-2005-0099
File: Boyett Petroleum, 171 Santa Rosa Avenue, Santa Rosa,
Case No. 1TSR018

Enclosed is Cleanup and Abatement Order (CAO) No. R1-2005-0099 in the matter of Carl Boyett, Carole Boyett and Boyett Petroleum for 171 Santa Rosa Avenue. For your information, a copy of the CAO has been forwarded to your consultant for their use and information.

If you have any questions you may contact Joan Fleck of my staff at (707) 576-2675.

Sincerely,


Catherine E. Kuhlman
Executive Officer

JEF:clh/100705_JEF_BoyettTransLet

Cc: Fire Inspector Corey Vincent, Santa Rosa Fire Department
Mr. Bradley Erskine, Kleinfelder Inc., 780 Chadbourne Road, Fairfield, CA
94534
Mr. David Noren, EBA Engineering, 825 Sonoma Avenue, Suite C, Santa Rosa,
CA 95404
Mr. Mike Sheppard, City of Santa Rosa, P.O. Box 1678, Santa Rosa, CA 95402
Mr. Marc Richardson, City of Santa Rosa, P. O. Box 1678, Santa Rosa, CA 95402
Mr. David Montague, City of Santa Rosa, Department of Public Works, 69 Stony
Circle, Santa Rosa, CA 95401
Mrs. Anita Clark, 5315 Spain Avenue, Santa Rosa, CA 95409
Mr. David Boyers, SWRCB, OCC
Ms. Jessica Holcombe, General Counsel, Boyett Petroleum, P.O. Box 576277,
Modesto, CA 95357

California Environmental Protection Agency

California Regional Water Quality Control Board
North Coast Region

CLEANUP AND ABATEMENT ORDER NO. R1-2005-0099

for

Boyett Petroleum
Carl Boyett
Carole Boyett

171 Santa Rosa Avenue
Santa Rosa

Sonoma County

The California Regional Water Quality Control Board, North Coast Region, (hereinafter Regional Water Board), finds that:

1. Carl and Carole Boyett own property at 171 Santa Rosa Avenue (hereinafter Site). The Site was the location of a retail gasoline station beginning in 1954 with Boyett Petroleum operation beginning in 1976. Carl Boyett, Carole Boyett and Boyett Petroleum are hereinafter referred to as the Dischargers.
2. Enforcement action began on January 22, 1985, when Cleanup and Abatement Order (CAO) No. 85-86 was issued to the Dischargers following the discovery of gasoline seeping into Santa Rosa Creek from cracks in the concrete lined channel of Santa Rosa Creek immediately north of the Site. The case file is extensive and contains a lengthy record.
3. Enforcement actions taken by the Regional Water Board since 1985 include:
 - CAO No. 97-120 issued by the Executive Officer in October 1997.
 - CAO No. 98-75 issued by the Executive Officer in July 1998.
 - Time Schedule Order No. 98-114 adopted by the Regional Water Board in October 1998 due to non-compliance with CAO No. 98-75.
 - Administrative Civil Liability Complaint (ACLC) No. R1-2003-23 issued by the Executive Officer in January 2003 for violations of the Time Schedule Order. The ACLC proposed to assess \$100,000 of civil liability and suspend additional civil liability contingent on compliance with a time schedule.
 - Administrative Civil Liability Order (ACLO) No. R1-2003-0075 adopted by the Regional Water Board in June 2003 and remanded by the State Water Resources Control Board on May 20, 2004.
4. On February 27, 2003, the Draft 2003 Corrective Action Plan was submitted. The document contained a proposal to:
 - Abate the discharge to Santa Rosa Creek by the installation of a groundwater cut-off wall and a groundwater extraction system.
 - Remove remaining sources including the removal of impacted soil and groundwater on site and in Santa Rosa Creek.
 - Install an ozone sparge system to restore the beneficial uses of groundwater.
5. The Dischargers' proposed schedule included the coordination of work with the City of Santa Rosa, Prince Memorial Greenway Project (PMGP) 2004 construction schedule. The PMGP is the Santa Rosa Creek restoration and linear park construction project. Since the proposed schedule was not compatible with the compliance schedule proposed by ACLC No. R1-2003-23, the Dischargers also proposed the operation of an interim groundwater extraction system to achieve compliance and allow for the coordination of final work with the PMGP.

6. Since that time, work that has been completed includes:

- Interim groundwater extraction beginning in February 2004.
- Abandonment of the on-site groundwater monitoring wells to allow for soil removal.
- Removal of contaminants from the Site and in Santa Rosa Creek beginning in May 2004 including significantly impacted soil, separate phase hydrocarbons on groundwater and groundwater impacted by dissolved phase gasoline.

7. Work remaining to be completed includes:

- Reinstallation of the on site groundwater monitoring well network.
- Completion of the final groundwater extraction system.
- Installation of the ozone (or alternate) groundwater treatment system.
- Completion of verification groundwater monitoring to evaluate the effectiveness of the corrective action activities.
- The submittal of reports for work already completed including the removal of impacted soil from on site and in Santa Rosa Creek, and the installation of the ground water cut-off wall.

8. The Dischargers have caused or permitted, cause or permit, or threaten to cause or permit waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance. Continuing discharges are in violation of the Porter-Cologne Water Quality Control Act and provisions of the Water Quality Control Plan for the North Coast Region (Basin Plan).

9. Existing and potential beneficial uses of areal groundwater include domestic, irrigation, and industrial supply. Beneficial uses of Santa Rosa Creek, a tributary to the Laguna de Santa Rosa and the Russian River are:

- a. municipal and domestic supply
- b. agricultural supply
- c. industrial process supply
- d. groundwater recharge
- e. navigation
- f. water contact recreation
- g. non-contact water recreation
- h. commercial and sport fishing
- i. warm freshwater habitat
- j. cold freshwater habitat
- k. wildlife habitat
- l. migration of aquatic organisms
- m. spawning, reproduction, and/or early development
- n. fresh water replenishment
- o. estuarine habitat
- p. rare, threatened or endangered species.

10. The California Water Code, and regulations and policies developed thereunder require cleanup and abatement of discharges and threatened discharges of waste to the extent feasible. Cleanup and abatement activities are to provide attainment of background levels of water quality or the highest water quality that is reasonable if background levels of water quality cannot be restored. Alternative cleanup levels less stringent than background concentration shall be permitted only if the discharger demonstrates that: it is not feasible to attain background levels; the alternative cleanup levels are consistent with the maximum benefit to the people of the State; alternative cleanup levels will not unreasonably affect present and anticipated beneficial uses of such water; and they will not result in water quality lower than prescribed in the Basin Plan and Policies adopted by the State and Regional Water Boards.

11. Water quality objectives in the Basin Plan are adopted to ensure protection of the beneficial uses of water. The most stringent water quality objectives for protection of all beneficial uses are selected as the protective water quality criteria. Alternative cleanup and abatement actions must evaluate the feasibility of, at a minimum: (1) cleanup to background levels, (2) cleanup to levels attainable through application of best practicable technology, and (3) cleanup to protective water quality criteria levels. Exhibit 1, attached to and made part of this Order, sets out the water quality objectives for groundwater.
12. Discharge prohibitions contained in the Basin Plan apply to this site. State Water Resources Control Board Resolution 68-16 applies to this site. State Water Resources Control Board Resolution 92-49 applies to this site and sets out the "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges under Section 13304 of the California Water Code."
13. The Regional Water Board will ensure adequate public participation at key steps in the remedial action process, and shall ensure that concurrence with a remedy for cleanup and abatement of the discharges at the site shall comply with the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) ("CEQA").
14. The issuance of this Cleanup and Abatement Order is an enforcement action being taken for the protection of the environment and, therefore, is exempt from the provisions of CEQA in accordance with Section 15308 and 15321, Chapter 3, Title 14 of the California Code of Regulations.
15. Pursuant to CWC Section 13304, the Regional Water Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Regional Water Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order
16. Any person affected by this action of the Board may petition the State Water Resources Control Board (State Water Board) to review the action in accordance with Section 13320 of the California Water Code and Title 23, California Code of Regulations, Section 2050. The petition must be received by the State Water Board within 30 days of the date of this Order. Copies of the law and regulations applicable to filing petitions will be provided upon request. In addition to filing a petition with the State Water Board, any person affected by this Order may request the Regional Water Board to reconsider this Order. Such request should be made within 30 days of the date of this Order. Note that even if reconsideration by the Regional Water Board is sought, filing a petition with the State Water Board within the 30-day period is necessary to preserve the petitioner's legal rights. If you choose to appeal the Order, be advised that you must comply with the Order while your appeal is being considered.
17. This CAO in no way limits the authority of this Regional Water Board to institute additional enforcement actions or to require additional investigation and cleanup at the Site consistent with California Water Code. This CAO may be revised by the Executive Officer, as additional information becomes available.
18. Failure to comply with the terms of this Order may result in enforcement under the CWC. Any person failing to provide technical reports containing information required by this Order by the required date(s) or falsifying any information in the technical reports is, pursuant to CWC Section 13268, guilty of a misdemeanor and may be subject to administrative civil liabilities of up to one thousand dollars (\$1,000.00) for each day in which the violation occurs. Any person failing to cleanup or abate threatened or actual discharges as required by this Order is, pursuant to CWC Section 13350(e), subject to administrative civil liabilities of up to five thousand dollars (\$5,000.00) per day or ten dollars (\$10) per gallon of waste discharged.

THEREFORE, IT IS HEREBY ORDERED that Cleanup and Abatement Order No. 98-75 is hereby rescinded in part. CAO No. 98-75 remains in effect for the purposes of enforcing past and ongoing

violations of that Order. This Order replaces CAO No. 98-75 for the purpose of prospectively directing cleanup and abatement activities on the Site. The partial rescission of CAO No. 98-75 does not affect any other Orders, which remain fully in effect.

IT IS FURTHER ORDERED THAT, pursuant to California Water Code Sections 13267(b) and 13304, the Dischargers shall cleanup and abate the discharge and threatened discharges and shall comply with the following provisions of this Order:

General Provisions

- A. Conduct all investigative work under the direction of a California registered civil engineer or geologist experienced in soil, groundwater and surface water assessment and remediation.
- B. Conduct all engineering work including any treatment system design and installation under the direction of a California professional civil engineer.

Groundwater Monitoring Well Network

- C. By December 15, 2005, submit¹ a work plan for the installation of a groundwater monitoring well network. ~~The plan must include on-site replacement wells and the previously proposed off site down gradient well to define the lateral extent of groundwater contamination.~~
- D. Complete the implementation of the work plan required by Task C within 45 days of the Regional Water Board Executive Officer's concurrence with the plan.
- E. Submit a report of work done pursuant to Task D not more than 45 days after the date installation of the groundwater monitoring well network is complete.

Interim Groundwater Extraction

- F. Submit a final report documenting the interim groundwater extraction work by December 15, 2005. The report must include the chronology of events from the onset of extraction to completion, the total volume of groundwater extracted, plume migration control verification and disposal records for extracted groundwater.

Final Groundwater Extraction (Creek Discharge Abatement)

- G. Complete the installation of the final groundwater extraction system associated with the groundwater cut off wall and creek discharge abatement by December 15, 2005.
- H. Begin extraction system operation by January 16, 2006.
- I. Submit a report documenting work done pursuant to Tasks G and H by March 15, 2006.
- J. Operate the final groundwater extraction system until the Regional Water Board Executive Officer determines that system operation is no longer required.
- K. Submit quarterly reports including a description of all operation and maintenance activities, and information documenting system effectiveness such as drawdown and plume capture. The quarterly reports may be combined with the quarterly groundwater monitoring reports. The quarterly reports must be submitted by the 15th day of the month following the end of each quarter (April 15th, July 15th, October 15th and January 15th).

¹ For the purposes of this Order, the word "submit" means that the document must be received by the Regional Water Board on or before the associated deadline.

Groundwater Cleanup

- L. Submit a Corrective Action Plan addendum for the final groundwater cleanup alternative including a groundwater treatment system design by April 3, 2006. The system shall be designed to address the full extent of the plume including off-site migration beneath the Pacific Gas & Electric Company power substation located immediately west of the site.
- M. Complete the installation of the groundwater treatment system within 60 days of the Regional Water Board Executive Officer's concurrence with the plan.
- N. Begin system operation within 45 days of system installation.
- O. Submit a report documenting work done pursuant to Tasks M and N within 60 days of completion of system installation.
- P. Operate the final groundwater treatment system until the Regional Water Board Executive Officer determines that system operation is no longer required.
- Q. Submit quarterly reports including a description of all operation and maintenance activities, and information to document system effectiveness such as petroleum hydrocarbon removal or destruction rates over time. The quarterly reports may be combined with the quarterly groundwater monitoring reports described in Task K.


Final Report

- R. Submit a report by January 2, 2006, documenting the removal of impacted soil on site and from Santa Rosa Creek and the installation of the groundwater cut-off wall. The report shall document how the work was done in coordination of the 2004 City of Santa Rosa Prince Memorial Greenway Project. The report must include as built plans for the south bank of Santa Rosa Creek including the cut-off wall.

Additional Work

- S. Complete any additional work deemed reasonably necessary by the Regional Water Board Executive Officer to abate and cleanup the discharge of waste.
- T. If, for any reason, the Dischargers are unable to perform any activity or submit any documentation in compliance with the work schedule contained in this Order or submitted pursuant to this Order and approved by the Executive Officer, the Dischargers may request in writing, an extension of time as specified. The extension request must be submitted 5 days in advance of the due date and shall include justification for this delay including the good faith effort performed to achieve compliance with the due date. The extension request shall also include a proposed time schedule with new performance dates for the due date in question and all subsequent dates dependent on the extension. A written extension may be granted for good cause, in which case the Order will be revised accordingly.

Ordered by


Catherine E. Kuhlman
Executive Officer

October 7, 2005